

The Potato News Bulletin

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The Potato Association of America

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ANNOUNCEMENTS

With the date of our next annual meeting less than three months away it behooves us to give early consideration to our program. What subject should we stress at this meeting? In the July issue of the "News Bulletin" you were advised of an informal meeting of three members of the executive committee on June 28 at which the following topics were suggested for symposium: Seed treatment; degeneration or virus diseases; seed improvement work. As a member of the Association what suggestions have you to offer in regard to symposium subjects? Last year as you will remember the subject of potato fertilizer, potato scab control and potato grading and marketing were discussed.

If you can prepare a paper on some phase of seed treatment, seed improvement work, or the virus diseases of the potato or any other subject relating to the potato industry won't you kindly send us the title and approximate time required to read it. The November issue of the Potato News Bulletin should contain at least a tentative program of our meeting which in all probability will be held December 29 to 31.

The secretary takes this opportunity to call your attention to the names of the chairmen of the various committees of the Association in order that you may communicate items of interest to them:

Committee on Research:

Dr. Freeman Weiss, Chairman, U. S. Dept. Agr., Washington, D. C.

Grading and Marketing:

J. M. Hurley, Chairman, 450 Weiting Block, Syracuse, N. Y.

Storage and Transportation:

W. H. Olin, Chairman, Denver & Rio Grande Ry., Denver, Colorado.

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Seed Improvement and Certification:

H. O. Werner, Chairman, College Agr., Lincoln, Neb.

Varietal Nomenclature and Testing:

Dr. E. V. Hardenburg, Chairman, College Agr., Ithaca, N. Y.

This issue will complete a year's publication of the "Bulletin" but in order to have subsequent volumes begin with the January issue it is proposed to continue volume one through November and December.

The slight delay in mailing out the October issue is due to withholding its publication until after the ninth of the month in order to include the Crop Estimates monthly report on yields. It is hoped that the inclusion of this timely information will be accepted as a sufficient reason for the few days' delay.

Your splendid response in furnishing potato notes and brief articles for this issue is greatly appreciated. Kindly continue the good work. Our aim should be to make each number of "The Potato News Bulletin" just a little more interesting than the preceding one. — **W. Stuart.**

The Potato News Bulletin is getting more interesting with each issue. Every item is good. I particularly like the "Crop Reports" and "Notes from Recent Literature." — **S. G. Peppin.**

POTATO NOTES

Colorado. — Shipments of Colorado potatoes up to September 20 have aggregated 1930 cars as compared with 2178 cars last season. The September 10 estimate of the 1924 crop is placed at 10,000 cars or 3876 cars less than in 1923.

There is a slightly smaller acreage this year, which coupled with the drought, accounts for the cut in yield. Prices are low. Today's report states that the San Luis Valley and Montrose district buyers are offering 60 to 75 cents per hundred weight for U. S. No. 1 stock.

Certified seed of high yielding strains now being used by the best growers in our potato districts are producing so heavily as compared with ordinary seed that there can be no question as to its merits and the demands for it should grow rapidly. The best growers who are using certified seed are getting double the yield, while the quality of the tubers is also much superior, to that from poor seed.

Experiments this season in several of our higher altitude moun-

tain valleys and mesas, or benches, in the raising of seed plots and having them rogued carefully look very promising as a source of certified seed for our commercial potato-growing districts.

Frost has killed the vines in all of our districts except Greeley, where the growers are hoping frost will hold off until after October 1 as they were late in planting their crop owing to unfavorable climatic conditions. — **Lou D. Sweet, September 20.**

Colorado.—The writer very seldom breaks into print but in reading your latest Bulletin, I notice that rarely is anything said about how the farmer is coming out raising poor crops, good crops, or certified crops of potatoes.

It appears to me that it is not a question of quantity or quality but a question, mainly, of the price to the grower.

In this particular section of the Potato growing Industry, which embraces Nebraska, Wyoming, Colorado, Utah and Idaho, under the modern way of handling potatoes, the grower is rapidly going broke. For five years, irrespective of crops grown, he has steadily grown poorer and the larger the crop the poorer the grower.

I have been in the potato business for upwards of forty years and believe that the old style methods produced the grower more money for his potatoes than the present day methods.

For instance, the first of this week, upwards of three hundred cars of potatoes were loaded in Colorado, rolled unsold, hunting markets, the result being demoralization everywhere. Local dealers who bought any potatoes and undertook to sell them were confronted with prices 10c to 15c per cwt. less than they were paying for the few potatoes that were purchased.

This is a sample of most of the potato seasons, from start to finish, and it looks to me that with a continuation of present day merchandising of potatoes, it will result in the potato industry being curtailed very materially and from feast there will be a famine.

An inspection of Government reports of daily movement, weekly movement, and monthly movement, shows that something should be done to curtail the evil of the farmer being compelled to practically give away his potatoes, instead of receiving a fair price, or a price above cost for his production. The consumption in the United States is about 500 cars daily and the shipments often over 1,000 cars.

I think the above is of sufficient importance for asking for comments all over the potato growing districts, as I understand it is an evil all over the country. — **J. H. Woolf.**

Connecticut.—More favorable weather has been received by potato growers in Connecticut, and yields of late potatoes are higher

than estimated heretofore, although a great majority of the early potato growers have been heavily hit due to dry weather, and the yields have been correspondingly low. The potato demonstration work has not been injured as much as anticipated. The results of the Kuen Bros., Irish Cobbler demonstration are as follows:

Source of seed	Bushel per acre No. 1's	Bushel per acre No. 2's	Total bushel per acre
Ott			
South Jersey	185.03	27.67	212.90
Farm Bureau			
Maine	163.23	20.68	183.91
Waltham Mitchell			
Minnesota	203.92	27.95	230.87

On a dollar basis they rank as follows: Minnesota, \$231.30; New Jersey, \$211.50; Maine, \$184.90.

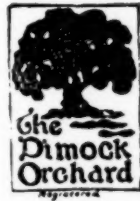
It is interesting to study these figures as they indicate that there is slight difference between sources of certified seed in corresponding difference in return per acre. Of more interest is a larger demonstration of H. L. Hamilton, of Ellington, Tolland County. His results are as follows:

Source of seed	Bus. per acre No. 1's	Bus. per acre No. 2's	Total bus. per acre
La Pierre, Vt.			
Direct	150.96	59.84	210.80
La Pierre, Special			
Direct	137.36	35.36	172.72
W. R. Christie, Maine (Sykes)	129.20	65.28	194.48
Ray Hews, Maine			
Ellington Farmers' Ex.	149.60	59.84	209.44
Moers, Maine			
Ellington Farmers' Ex.	123.76	84.32	208.08
La Pierre			
(In a moist spot)	418.88	47.60	466.48

By studying these results, it is noticed that the La Pierre strain for Vermont in the demonstration rows, gave a total yield of 210 bushels. Of this yield 25% were seconds. The same strain in the southern part of the field, where more water was available, yielded 466 bushels, and contained only 10% seconds. This same point has been noticed in other demonstrations.

The results of Daigle Bros., Marion, Conn., a larger demonstration than either of the others is as follows:

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Elizabeth Lawrence Clarke

The fields of Green Mountains at the Dimock Orchard are certified by the state and are rogued repeatedly by trained workers who keep exact count of all plants removed.

Roguing Record for Field 26 22.5 acres

	1st roguing plants per A	2nd roguing plants per A	3rd roguing plants per A
Mosaic	12.4	10.4	3.7
Leaf Roll	6.3	1.9	.4
Yellow dwarf	7.5	.6	1.4

Seed from this field or from others equally desirable can be furnished at any time from the Dimock Orchard storage which is situated on the Boston and Maine railroad.

Source of seed	Bus. per acre No. 1's	Bus. per acre No. 2's	Bus. per acre culls	Total bus. per acre
John McElwain Caribou, Me.	194.81	15.73	4.84	215.34
Ray Hews Easton, Me.	205.7	22.99	4.84	233.53
Windsor County Vermont	226.27	30.25	7.26	263.78
Grower 87 N. Y. R. D. Foster	208.12	19.36	6.05	233.53
Russets Jos. Onelette, Caribou, Me.	140.36	20.57	7.26	168.19
E. L. Amesden Bethel, Vt.	185.13	36.30	8.47	229.90
Dimock, Vt. 2nd Size	157.30	27.83	7.26	192.39
Cobblers Newman R. Doyle Caribou	158.51	19.36	6.05	183.92
Cobblers Minnesota	187.55	21.78	.48	214.17
McElwain Strain Green Mts. from a moist section of field, east side	339.30	12.10	3.63	415.03

The same moisture influence is noticed with the McElwin strain. Where plenty of moisture is found on the east side of the field, a total yield of 415 bushels per acre was obtained. This yield contained less than 4 per cent seconds and culls. The same strain on the west side of the field, 500 feet distant from the east, a yield of only 215 bushels, of which 10 per cent were seconds and culls were obtained. Further study of Daigle Bros. Green Mountain strains, indicate that Maine strain average yield is 224 bushels, Vermont strain 229 bushels showing little difference between sources of seed from these two states.

Mr. H. S. Coe of Waterbury, is in the middle of harvesting his potatoes. He has approximately 40 acres. The present yield indicates about 9000 bushels. This acreage has been grown following the Maine methods. Mr. Coe estimates his cost per acre to be \$125. His land has a relative high water table and suffered less from the drought than other fields with low water tables. Other men in the state of Connecticut trying Maine methods this year, have 50 bushels or less as a yield per acre. This high ridging generally does not pay in Connecticut.—A. E. Wilkinson, September 22.

Indiana.—The early potato crop in Indiana was one of the best in years. The higher yields and unusual quality was due largely to the use of certified seed and ideal growing conditions throughout the season. While a frost on the low muck lands of northern Indiana killed the potato vines on the 5th of September, other places in the state have had an unusual cool moist growing season and prospects are for a large crop of late potatoes this

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year. More than 200 carloads of certified seed have been used. These have been unloaded in every county in the state. A careful check last year on 9700 farms in Indiana where 84,000 bushels of certified seed were planted gave an average increase of 44.1 bushel over common northern seed.

An unusual part of the program for potato betterment in the state was the conspicuous part played by the Baltimore and Ohio Railroad. This system operates through twenty-three counties in the state. In co-operation with Purdue Extension Department this railroad system distributed forty bushels of certified seed to ten boys in each county or two carloads in all. These boys followed a very definite program, planting this seed on fertilized soil and giving the crop the best of cultural practice during the growing season. As a result of this 250 boys averaged 204 bushels of early potatoes an acre. Four boys secured over 400 bushels an acre! The lowest yield secured was 116 bushels an acre.

Last year 1100 boys used certified northern grown potatoes, planting them on heavily fertilized soil and secured an average yield of 150 bushels per acre.

On account of our Indiana markets for high grade home grown potatoes, farmers have found this crop a very profitable one.—
F. C. Gaylord, September 22.

Kansas.—The Kaw Valley crop is just about moved. Frequent rains and low markets prolonged the digging considerably. The total movement will amount to nearly 4500 cars, as compared to 3200 cars last year. The acreage was slightly less so you can see we had a pretty good year. Quality was good and the potatoes were put up in better shape than ever before. Seed treatment played a big part in producing high quality potatoes. Records show that over 7,000 acres were planted with treated seed. The yield records showed an average increase of 30 bushels per acre in favor of seed treatment plots.

Two of the Kaw Valley growers, Messrs. G. E. Kelsey and J. W. Cochran made trips to the Virginia and New Jersey sections at the close of our season to study conditions there. They returned feeling elated over Kaw Valley's future prospects and declared they were satisfied to remain in the Kaw Valley to produce potatoes.

The Kansas Free Fair Potato Show contained splendid exhibits in both potato and sweet potato classes. Twenty-seven entries of Irish Cobblers scored within a few points of one another.

Mr. Chas. Speaker of Turner, Kansas, was successful in making the "400 bushel club." The rules state that measurements and weights must be taken on a plot an acre or more in size by the County Farm Agent and should it be found that 400 bushels or more of marketable (U. S. No. 1) potatoes are produced, the grower is entitled to membership. Several growers came within a few bushels of being eligible.

Our Kansas Potato Show is to be held November 5, 6 and 7, at Kansas City, Kansas. Better send me a few copies of the last issue

of "The Potato News Bulletin" for display and some membership blanks. Let us plan, each one of us, to secure a new member every month. — **E. A. Stodyke, September 11.**

Maine. — Market very dull; street prices on Irish Cobblers run from 90 cents to \$1.25 per barrel.

Growers in general rather discouraged with the low price of potatoes at the present time and anticipate a better market in about three weeks when the eastern markets clean up from the southern heavy crop lap-overs.

Stock exceptionally fine in quality though a little immature.

Weather mild, with cold nights; very few local showers. — **R. D. Hews.**

Michigan. — The weather conditions in Michigan continue cool and wet and a few reports of late blight have been received. Killing frosts in the Upper Peninsula of Michigan and in a few of the more northern counties no doubt will prevent any serious infection in those sections of the late blight. It is recommended that fields that show slight infections of late blight be sprayed with white arsenic-copper solution to kill the foliage and check the spread of late blight. Practically all of the fields are of sufficient maturity to warrant such a practice.

The general market quality of the Michigan stock this year should be considerably better than that of the last two seasons because the favorable weather condition has helped the tubers make a uniform constant growth and no doubt has prevented serious development of hollow heart. The use of better seed, closer spacing of the hills and earlier planting practices which have been more generally adopted this year, should better the quality of the crop.

Potato-digging operations will be in full swing about the first of October. Michigan so far this season has shipped approximately 900 cars.

The field inspections of certified seed potatoes are now completed, the total number of acres passing the certification requirements being 1811. This is approximately 60 acres less than that of last year. The percentage of fields rejected this season was 27.7 as compared with 34.8 in 1923. No doubt the average yield per acre from certified fields this year will be well over 200 bushels. Last year it was 192 bushels. All indications are that the quality of this year's seed crop will be exceptionally good. — **H. C. Moore, September 20.**

Michigan. — The northern part of Michigan, especially in the Upper Peninsula, had a killing frost on Thursday, September 11th, the thermometer dropping to 25° F. at the Upper Peninsula Experiment Station. All the early stock had matured and the lates were well developed so that the yield will be about as usual. In the northern part of the Lower Peninsula back from the Great

Lakes there was severe frost injury especially in the low areas.

Late blight made its appearance about September 1st, and the following week being found in Schoolcraft, Alpena, Montcalm, and Kent Counties. Several days of dry hot sunshine seems to have checked it somewhat and in the North the frost has halted further development unless it causes some rot in the fields already affected. The weather during the next two weeks will determine the extent of the development in the Greenville Section.

The September Crop Estimate gives the prospective crop as 33,110,000 bushels. This is somewhat less than last year. Moisture has been ample in most sections of the state and the type and yield are better than in former years.

Digging of the early-planted late crop is well under way in the Greenville section. Some hollow heart has developed on account of excessive moisture causing production of oversized potatoes. Tops of late varieties are still green. Early blight is quite general, but not serious enough to shorten the crop materially except on the earlies. Leaf hoppers causing some damage but not thick as in former years. Potato aphids developing rapidly over the central part of the state causing plants to bronze over and die. — J. W. Weston, September 22.

Minnesota. — Five thousand one hundred and seventy-six acres of certified seed potatoes, much of which is under contract to be sold through the Minnesota Potato Growers Exchange, have passed the two field inspections of the State Department of Agriculture and is ready for final certification.

No bin inspection will be made this year. However, all cars, on being loaded out, must be inspected by the State Department and come up to the requirements of the new Minnesota state certified seed grade before certification is completed and the second tag issued.

Kittson County leads in certification work, having 1600 acres. Practically all of this acreage is signed with the Exchange. Early Ohio and Irish Cobbler are the principle varieties certified. There is more than 2,000 acres of each. Other varieties are Bliss Triumph, Green Mountain, Russet Burbank and Rural.

The Minnesota Potato Exchange, operating for the first time this year, will sell the potatoes of 12,887 members. "Gopher State" is the brand name adopted by the Exchange, and will be used in selling both table and seed stock.

The 1924 growing season has been unusual. The spring was late and the summer cool; an early frost, covering most of the northwest section of the state, hit the late varieties and materially reduced yields.

In most potato sections, the size is large, the crop nearly normal, with excellent quality. Due to the slow season, digging operations are late and in "The Valley" a further delay is being caused by bad weather which has interfered with threshing. A scarcity

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We also offer Bliss Triumph seed of exceptional vigor, and excellent type yielding with us over 300 bushels per acre, containing less than one per cent total diseases except Mosaic.

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of help has also aggravated the situation. — **W. V. Longley**, Director Seed Department Minnesota Seed Potato Growers' Exchange, September 27.

New Jersey (Cumberland County). — The late crop in this section is growing vigorously. Unless an early frost kills the vines there should be a large crop. A slight frost was experienced the week of September 8, but did not result in any damage. — **J. Norton Woodruff**.

New Jersey. — Approximately 80 per cent of the crop has been dug in Monmouth County. The growers are very much discouraged over the low prices they have received but are already making plans for next year. The present indications are that there will be more certified seed planted in New Jersey in 1925 than ever before. This is due to the fact that the certified seed has given very good results this year and also to the fact that an effort is being made by the agricultural agencies of the state to point out to the grower the advisability of planting only certified seed.

The first field inspection of late crop seed entered for certification has been completed. In most cases, the fields planted with strains which have been grown in the state for a number of years, passed this first inspection, whereas most of the new strains were rejected because of an excess of leaf roll. No late blight has been observed on the late crop and only a trace of early blight.

The growing conditions are excellent and all of the men who have seed entered for certification are roguing. Some have already gone through their fields twice and have done an excellent job. — **W. H. Martin**.

New Jersey (Salem County). — The Cobbler market remained open in southern New Jersey longer than usual this year. The low price that prevailed throughout the season is responsible for considerable delay. Many growers felt the price would be better later on and purposely held off. The closing price, however, was around \$1.10 per cwt., and the average for the entire season about \$1.00 per cwt. Although southern New Jersey shipped 1,000 more cars of potatoes than in 1923, the total income was \$500,000 less than in 1923.

The seed crop in southern New Jersey is looking very good. Although the seed acreage is cut 25 per cent there will probably be 85 per cent of the 1923 crop of potatoes as the general yield per acre should be better under present conditions.

The Southern New Jersey "Second Crop Seed Tour" will be held Monday and Tuesday, September 29th and 30th. Representatives from several states are expected on this tour. — **J. C. Crissey**, September 23.

New York. — In Up-state New York and northern Pennsylv-

nia the potato crop is in a dangerous situation. Late blight and rot are very general over a wide territory. Up to the present writing the proportion of vines destroyed has caused considerable loss, but the amount of rot is as yet small compared with such seasons as 1903 or 1912. For nearly two months storms have come from the west at intervals of a week or less, and each one has been followed by drying north winds. In many fields the vines have been destroyed, but most of the remainder have not got more than a moderate infection of the disease.

The great danger is that a week of heavy dashing rains would not only complete the destruction of all unsprayed vines, but would wash the infection down to the tubers which would cause them to rot. Should such a rainy period come before killing frosts, the crop loss in New York state alone might reach that of 1903 when the Geneva Experiment Station estimated the loss for the state at 20,000,000 bushels. — **Daniel Dean, September 22.**

North Dakota. — Potato digging started in North Dakota to a limited extent along about the 20th of September. The general crop matured later than usual this year. For table stock the crop promises a satisfactory yield of quality tubers. The acreage is nothing like as large as in 1923, but growth conditions have been more uniformly correct for tuber production.

As yet it is too early to speak very definitely of the prospects for seed stock. North Dakota is comparatively young in the seed registration and certification work. The workers in the Pure Seed Laboratory have this year carried out very careful field crop inspection. As it is of the greatest importance that certified or registered seed stock should at least measure up to or excel the best of bulk stock that comes upon the market, it is possible that the actual certification or registration of seed will be reduced in bushelage this year rather than increased.

Aside from the reason just given there is another reason for the prospects of a comparatively low certification of seed stock. Many of the most competent North Dakota growers discontinued their efforts during 1924 because of the very discouraging prices obtained for the 1923 crop. There was an excess of table stock open to the market and much of it of high quality was sold as seed stock. This greatly reduced the actual demand and price paid for certified seed. Many growers this season, on account of the cost of labor and difficulties surrounding the handling of certified seed have reduced the acreage and have been content to meet the table stock market.

It is the opinion of the writer also that many buyers and users of certified seed stock are demanding far more of the growers of certified seed than they are of themselves. This eventually is going to have a very depressing effect upon the average northern grower of seed stock, particularly of certified seed. Growers in Iowa, Kansas, Nebraska and the southern states ought not to

expect certified seed to relieve them of all the responsibility in the potato game. Many of these buyers of certified seed never take the trouble to "stem-end" or treat the seed before or after cutting. Very often they just cut and plant and spread more disease in their planting operations from a few diseased or decayed tubers than can possibly take place in the northwest potato growing fields. We this year know of some very good potatoes that were ruined in this manner.

The next step in potato improvement would seem to be to educate the southern and mid-southern growers to properly treat and handle the seed at planting time. It is quite evident that no northern growers and no certification agency will ever be able to guarantee absolute freedom from injurious diseases which may be greatly enhanced and widely distributed on the seed pieces at planting time. — **H. L. Bolley, Agr. Coll. N. D. September 26.**

Ontario, Can. — According to the September Fruit and Vegetable Crop Report, No. 4, of the Dominion Fruit Branch, potatoes, with the exception of a very few districts, are reported to promise a yield of 150 per cent of last year's crop, in Ontario. This increase may be attributed to some extent to the greater acreage planted to earlies last spring, and good growing conditions over the major part of the best potato sections.

Table stock potatoes have been down in price and some cars were loaded recently in the Zephyr district for as low as 40 cents per 90 lbs., f. o. b., however, there has been a slight improvement since; 65 cents to 85 cents per 90 lb. bag in car lots on track, Toronto, are now the ruling prices, with 90 cents to \$1.25 per 90 lbs. retail for small lots in the cities.

Certified Extra No. 1 seed potatoes, Irish Cobblers and Green Mountains, are quoted at \$1.75 per 90 lbs. f. o. b., by the seed growers at Northern points, for fall shipment. Some of the buyers who make a practice of purchasing seed in the fall say they feel that this price is too high in view of the low prices prevailing for table stock this year and they intend saving the best of their own fields for seed; however, there appears to be a very fair demand for Irish Cobblers at that price and it is likely that price will hold this fall.

Most of the certified seed grown in the southern part of the province will likely be stored by the growers until spring; there is usually a much better demand for seed in small lots at that time, at good prices.

Many of our early potato growers who planted certified seed this spring for the first time have written us to say they dug immense crops this year and are well satisfied with the showing of it. This is encouraging to the inspectors who are doing the field work as well as those in charge, especially when we see these growers willing to pay a good premium for the inspected seed as well as the freight from distant shipping points.

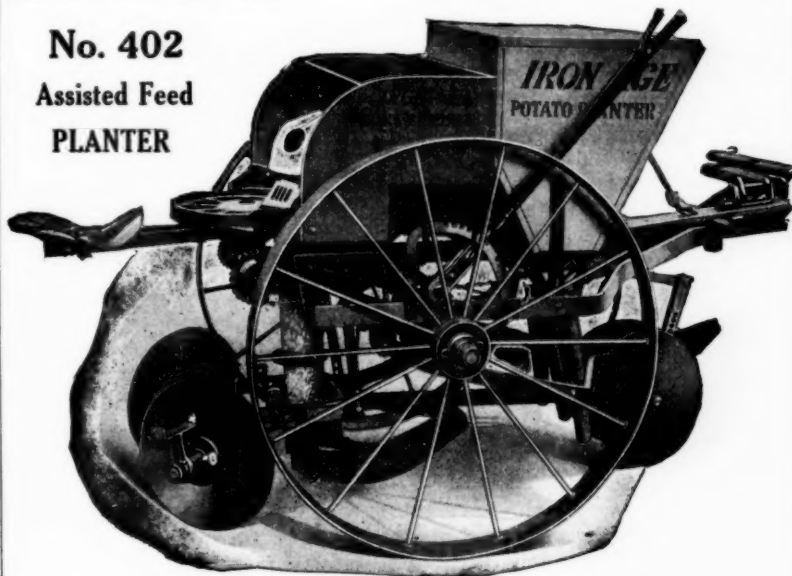
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623 So. Washington Sq., Philadelphia, Pa.

There was a total of 342 applications received for field inspections this year with a view to certification, and altogether 1175 acres were inspected. Two inspections were given this season and three in some special cases. Of the total 1175 acres, 655 acres passed both inspections, 372 acres were rejected and 148 acres were withdrawn and dug for table stock. Of the 655 acres which passed 442 acres were Irish Cobblers, 110 acres Green Mountains, and the balance mostly Dooleys.

The special field day and potato tour put on at Fort William in the Thunder Bay district recently was voted a success by the growers. We expected about fifty out, (this being the busy season and the first field meeting of its kind in that district) prepared for seventy-five and was agreeably surprised when nearly two hundred men arrived, twelve actually came out over sixty miles of new roads for this day. Demonstrations in spraying and roguing were carried out and short lectures given, and at the request of the growers themselves it was decided to make the field day an annual event in future.

Potatoes were frozen down in most of the Northern districts on the night of September 8th this year and the weather has continued wet and cold since; digging will be general about the first week in October if weather permits.

This has been a great year for blossoms on potato plants in the North, many fields were in flower for over a month.

Mr. H. N. McCool of Devlin, Rainy River District, Northern Ontario, had an interesting experience with planting potatoes, early, this season. He fertilized one acre rather heavily and planted with his own regular seed (making no special selection at all) about three weeks earlier than usual, intending to sell them as early table stock, and then planted the remainder of the field with the balance of the seed from the same bin around the usual time for planting, to be sold as seed potatoes, variety used was the Irish Cobbler. I had an opportunity to examine this field on the 29th of August and the early planted seed had an average set of around fifteen marketable potatoes to the plant, the later planting averaged four marketable potatoes to the plant. Grower is at a loss to decide whether it was the extra amount of fertilizer used on the early planting or if the weather conditions around the time the potato set were responsible for the big difference in number of potatoes to the hill.

This same grower had a field planted to Irish Cobbler seed that he had culled out of last year's crop owing to their being away off type, being much too long and narrow in shape for their variety, many ran around 6 inches long and $1\frac{1}{2}$ to 2 inches through. I examined many hills in this field and found they were back to the Irish Cobbler type this year.

In the inspection work last year we found the Dooley (Rural New Yorker type of potato) averaged much longer in shape than usual, much more so than the other varieties. — J. Tucker, District Inspector for Ontario, September 22.

Prince Edward Island. — The second field inspection was completed on the 10th inst. There were 5880 acres of Irish Cobblers and 2940 acres of Green Mountains inspected as well as a number of small areas of other varieties. At the time of writing we can not say just what percentage passed, but it will be high. Last year our average was 94.9 per cent passing final inspection.

Digging of the Irish Cobbler crop is now in full swing and early reports we are receiving indicate an excellent yield. The average is running well over one hundred barrels per acre. One report of a two-acre plot yielded at the rate of one hundred and seventy seven barrels to the acre. The tubers the writer has seen so far are of excellent type and clean skins. A number of County Fairs have been visited and the exhibits examined carefully, these show not a little care and skill in choosing for type and freedom from any skin blemishes.

We have been busy the past two weeks digging our experimental plots. The sulphur plots yielded on an average one hundred and thirty barrels per acre. The white-blossomed Cobblers mentioned in the August News Bulletin have been dug and are of good type. We shall continue to plant these to determine if the white blossoms remain constant. — **S. G. Peppin.**

South Dakota. — The annual South Dakota potato tour was considered especially successful this year due to the ease with which certain potato diseases could be recognized as compared to last year. Mosaic was especially evident on a few of the Bliss Triumph fields of poorer quality.

The tour started at Watertown proceeding from there south. Several fields were found containing blackleg. This was of particular interest to growers who have not been familiar with this disease.

Mr. Frank Drake at Clear Lake, was visited because of his strain of Triumphs which he is growing, having imported some certified stock from Montana last spring. The tourists were conducted to the Experiment Station at Brookings where they were much interested in the test plots of all certified growers.

The second day was spent in touring portions of Brookings and Hamlin counties. Much interest was shown in observing the effects of good and poor storage. One half of one field visited was planted with seed stored in a poorly ventilated cellar with temperatures above 40 degrees F. at all times. This portion of the field had a poor stand, a large percentage of blackleg, weak plants and spindle tuber. The other half of the field had been planted with seed coming from a pit which had been properly constructed and ventilated. Any observer could tell, right to the row, the difference. The percentage of disease was very low in the portion of the field planted to good seed. Yield records will be taken of these two portions.

Most of the better potato growers here in South Dakota are be-

ginning to realize the utmost importance of good storage for their seed stock.

The last day of the tour was spent in Codington and Day counties. Besides the study of potato fields, a demonstration was given of high pressure spraying by Mr. V. H. Belk of Henry, who is president of the South Dakota Potato Growers Association. In addition to spraying, Peterson Brothers, of Lily, South Dakota, demonstrated their combined digger, picker and sacker. The machine is pulled by a Fordson tractor. They have used his for several years and find it very satisfactory.

The entire tour was planned and managed by Mr. A. W. Palm, secretary of the Potato Growers Association. — **George H. Valentine, Brookings, S. D.**

South Dakota. — The total number of acres applied for inspection was slightly less than last year. This was probably due to the depression caused by low prices the past two years. There were approximately 500 acres given the first inspection. Varieties included 150 acres of Early Ohios and 268½ acres of Irish Cobblers.

Nine per cent of these were eliminated at the time of first inspection and 21 per cent were eliminated at time of second inspection. Bin inspection has not been given to lots yet as digging has just commenced. We have found quite a variety of diseases. Several of the fields were eliminated on first inspection because of the presence of blackleg, rhizoctonia, spindle tuber and varietal mixtures. Several Triumph fields were eliminated on first inspection because of the presence of mosaic. On the second inspection several fields were eliminated because of development of fusarium wilt, further development of spindle tuber and insect injury. The acreage for potatoes is generally less than last year but the yield will be better than in 1923. Several of our certified growers have already sold options on their crops. Because of the fact that certified potato growers at this time do not have a marketing agency, most of the potatoes will be sold direct from grower to southern markets. — **George Valentine, September 25.**

Washington. — The last six weeks have been spent in the field almost continuously working on potato diseases.

During my five years of Extension work in the control of potato diseases, I have never seen such great enthusiasm among the farmers for the use of better seed and for the control of diseases, as I have this past summer. The demonstrations that we have been carrying on are selling the idea of better seed to a very large number of our potato growers. The mosaic situation in a number of sections is becoming very serious, and the farmers are recognizing that the only way to control this serious disease, and related diseases, is by the use of good seed. I find that there is a tendency for a greater enthusiasm for good seed among the commercial growers than there is for the production of good seed among the

Northern Grown Seed



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Early Ohio	Bliss Triumph	Russet Burbank
Irish Cobbler	Green Mountain	Rural New Yorker

Certified and non-certified "Gopher State" brand seed.

Certified seed, inspected and certified by the Minnesota Department of Agriculture and graded to specifications of Minnesota Certified Seed Grade.

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369 Robert St.,

Seed Department,

St. Paul, Minn.

seed growers. This season some of our seed growers have been very very lax in their methods, in that some of them have planted straight 'junk' not very far from their good seed patches; while others were out harvesting other crops when they ought to have been in their seed patches roguing.

As a result of the use of good seed, the writer made the following observations:

Mr. Wexler, of Pasco, had in five acres of Triumph, from which he harvested between twenty and twenty-five tons of early potatoes. In Spokane County, the County Agent secured 375 sacks of certified Netted Gems and distributed these to 71 growers in 26 communities for demonstrational purposes. In going over these demonstrations and comparing the certified seed with the common seed of the community, we find that the certified seed ranges from 33 per cent to 100 per cent better, and the prospects for a yield accordingly are very good. In a number of cases we found that the demonstrator had a strain of potatoes on his farm that was in all respects equal to the certified product. One farmer on South Moran Prairie in Spokane County last year secured 16 sacks of certified Early Ohio potatoes. Then he purchased 39 sacks of common seed of the same variety and planted them side by side. The certified seed yielded for him 50 sacks per acre, while the common seed yielded 14 sacks per acre. According to his own statement, he would have been \$600.00 ahead had he used good seed.

In one of our demonstrations in Pacific County, we found that there was in the neighborhood of 54.3 per cent mosaic on an uncertified plot; while on the certified plot there was only 6.2 per cent mosaic. Such demonstrations as this have enthused the farmers to the necessity of using good seed.

In one other demonstration in Thurston County, we found that the uncertified seed produced 100 per cent mosaic, while certified seed next to it had not over three or four per cent mosaic. It took this demonstration to convince the County Agent that there was such a thing as mosaic in existence. Previous to this time he had been very sceptical about the need of potato disease work in his county. — **George L. Zundel, September 13.**

Wisconsin. — From the standpoint of growing conditions, Wisconsin growers to date have had a very successful season. The weather has been cool and moist and has favored vine growth. The recent change in the weather and the occurrence of frosts, I believe, will benefit rather than injure the Wisconsin potato crop. In the upper part of the state the early Triumph crop was made and frosts will not reduce the yield of Triumphs.

In the upper section of the state, the late crop will be reduced somewhat by frost injury but I believe the quality will be better. If the vines had remained green, we would have had considerable coarse, overgrown stock. Under present conditions, the quality is excellent although in some sections it will run a little small.

In certain sections, late blight had started to develop in upper

Winconsin and the frosts early in September have killed the vines before much damage was done and I would not anticipate we will have any serious difficulty with rot.

Due to extreme cool temperatures we have had an ideal season for the expression of the mosaic disease. This has been a distinct advantage to us in locating our better strains of seed, especially with the Triumph variety. These conditions have also been favorable for the tuber index work.

From the standpoint of yield and quality, we consider conditions favorable to date in this state. — J. G. Milward, September 22.

NOTES ON RECENT LITERATURE

ANONYMOUS. — Fall purchase of seed potatoes. — *Seed Potato Circular No. 26 Pa. Dept. Agr. Sept. 15, 1924.* — The author gives six reasons in favor of fall purchase of seed potatoes, the outstanding reasons are cheapness; less danger in transporting them; more easily graded; seed can be treated when dormant; control of storage conditions. The advantages in spring purchase is in avoidance of storage shrinkage and loss from storage rots. It is believed by the author that on the whole the advantage is in favor of fall purchasing. — W. Stuart.

ANONYMOUS. — Potato seed certification in the state. — *Seed Potato Circular No. 26 Pa. Dept. Agr. Sept. 15, 1924.* — Seed potato certification in Pennsylvania this season is being conducted in Potter, Bradford, Sullivan, Cambria, and Somerset Counties. The present outlook is for a bumper crop and it is predicted that there will be at least 75,000 bushels of certified seed divided as follows: — Russet Rural 50,000 bushels; a few Irish Cobblers and the balance Rural New Yorker No. 2. The average total disease count of fields passed for certification is approximately two per cent. These diseased plants are being removed by trained rogues. — W. Stuart.

ANONYMOUS. — The maintenance of pure and vigorous stocks of varieties of the potato. — *B'd. of Agr. for Scotland, Misc. Pub. No. 3, 1923, 64 pp. with color chart and 1 figure.* — The author, or authors, emphasize the necessity of keeping stocks of potatoes free from admixture with other varieties, especially since the discovery of the wide dissemination of wart disease and of the immunity of certain varieties to this disease. The primary object of the publication is stated to be that of placing before the grower in convenient form such information and advice as are likely to be of service to him in the handling and roguing of crops of commercial varieties of the potato. The subjects treated are as follows:—

“Precautionary measures to avoid mixing of stocks.

Roguing in the field.

Methods of identification:— Identification by the shaw or haulm; by the date of maturity; by tuber and sprout, color of sprout during the growing season;

Description notes on common varieties and methods of roguing them.

The prevention of deterioration of stocks consequent on disease."

This publication should be of interest to American seed potato growers and specialists. — **W. Stuart.**

ARTSCHWAGER, ERNST.— Studies on the potato tuber. — *Journ. Agr. Res.* 27:809-835, 1924. 8 text figures and 10 plates.—

The first part of the paper is devoted to a study of the ontogeny and anatomy of the potato tuber, to afford a background for the interpretation of pathological changes such as accompany various tuber diseases. In the second part an attempt is made at systematic study of such internal characters as might aid in the natural grouping of potato varieties.

Summary

(1) Developmental studies on the potato tuber lead us to conclude that:

(a) The periderm is formed jointly from the epidermis and the hypodermis. Continuity of the periderm misassured by the development of a phellogen arising in the hypodermis.

(b) The cortex of the tuber forms a very narrow band of tissue between the periderm and the outer circle of phloem groups. The cells contain the pigment in case of colored varieties; protein crystals, tannins, and a small amount of starch.

(c) The pith forms the narrow central core of the tuber, but is continuous with the eyes by means of lateral branches. The cells of the pith are poor in starch and have a higher water content than the rest of the tuber issue.

(d) The vascular tissue: The vascular ring as it appears to the naked eye constitutes a narrow band of tissue which contains the xylem and the secondary phloem. The broad bands of storage parenchyma in which numerous groups of phloem are embedded, though procambial in origin, appears distinct from the vascular ring and is not the result of cambial growth.

(2) The morphological advantage which the apical eye possesses over the basal ones seems to offer the most reasonable explanation for the dominance of the former.

(3) The nucleus of the sieve tubes disappears before the elements fully matured. The peculiar protozoan-like structures observed in have young sieve tubes are of cytoplasmic origin and have only a temporary existence.

(4) In a consideration of the chemical constitution of the tuber, the protein crystals, the tannin vesicles, and the solanin are of special interest. The protein crystals occur abundantly in the peripheral cells of the cortex; the tannin vesicles in the region of the buds, especially at the time of sprouting; the solanin ac-

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STANDARD VARIETIES
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accumulates in large quantities in the region of the buds, where it appears to be of importance in the metabolism of the growing plant. If germination is held back, solanin may accumulate in abnormal quantities.

(5) The phloem of the stolon occupies about 24 per cent of the area of the stolon cross section. Its extensive development, in response to the apparent need for increased food movement, strengthens the view that the phloem is, after all, the most important channel for the translocation of organic substances.

(6) A study of such internal characters as might aid in the task of grouping potato varieties or establishing their relationship indicates that the presence, or absence of stone cells is the only definite character which can be used successfully in a classification scheme." — E. Artschwager.

DUCOMET, V. — Degenerescence de la pomme de terre. — Theorie mycorphizienne et selection, — *Extrait des Ann. de l'Ecole Nat'l d'Agr. de Grignon* 8: 1923-'24, 43 pp. — Paper read Nov. 1, 1923.

After carefully reviewing the various theories advanced in regard to the possible causes of the degeneracy of the potato, Ducomet submits the following conclusions.

Degeneracy still remains a mystery both as to its nature and causes. Following this pronouncement there is a condensed statement with reference to mycorphize, effect of cool and warm climates.

Humidity of soil and air is considered a very important factor by the author. — **W. Stuart.**

ROACH, W. A. — Studies in the varietal immunity of potatoes to wart disease (*Synchytrium endobioticum* Schilb., Perc.) Part I. The influence of the foliage on the tuber as shown by grafting. — *Ann. of Applied Biology* 10: 142-146, Feb. 1923. — The author grafted immune varieties on immune; susceptible on immune; immune on susceptible; and susceptible on susceptible. No evidence was obtained which would indicate that the scion exerted any influence over the stock insofar as it relates to immunity or susceptibility to wart disease. The first two grafts produced wart-free tubers, while the last two gave wart-infected stock.

The following statement is made in the summary:—"It follows that no compound synthesised in the leaves is likely to be responsible for separating potatoes into "immunes" and "susceptibles." — **W. Stuart.**

SALAMAN, DR. R. N. — Synonymous varieties of potatoes. — *Published by the Nat'l. Inst. of Agr. Bot.* 1924, 31 pp. — This booklet contains all of the results which have been arrived at by the Synonym Committee of the National Institute of Agricultural Botany and its predecessor the Ministry of Agriculture between the years 1915 to 1924. The following definition is given of the work "Synonym" as used in relation to potato varieties:—"Two varieties are considered to be synonymous when all such morphological features as can be recognized by an experienced observer as well as all such physiological characters as can be determined by ordinary observation and experience, are common to both; in fact when the characters of haulm, flower and tuber, as well as maturity, resistance to disease, and particularly immunity or otherwise to "wart disease", are the same in both. Two alphabetical lists are given. The first includes names of distinct varieties; the second names of synonyms. — **W. Stuart.**

MISCELLANEOUS PAPERS

VERMONT AT THE EASTERN STATES EXPOSITION

Julian A. Dimock

The Vermont seed potato industry featured its product at the annual Eastern States Exposition in Springfield last month in a new way. In addition to the mass display of Green Mountains, and the individuals exhibits,—Mountains and Cobblers,—of the members of the Vermont Potato Association, hot baked Green Mountains were given away daily at 3 P. M.

From 600 to 700 people each day were treated to a first class, mealy, baked potato, generously buttered, seasoned with pepper and salt, provided with a paper spoon and served in a folded Denison napkin in lieu of a plate.

Vermont Certified Seed Potatoes

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Her Mountains and Rough Country, and
Her Small and Isolated Fields.

VERMONT EXCELS in NATURAL ADVANTAGES

For the Production of High Grade Seed Potatoes.
WE HAVE THE SEED YOU NEED — The Best Certified
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IT IS QUALITY AND NOT QUANTITY THAT WE OFFER YOU:

500 acres Green Mountains — 150 acres Cobblers.
Adequate Shipping Inspection — New Sacks if Specified.

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Alfred H. Gilbert,

Secy-Treas., Vermont Certified Seed Potato
Growers' Association,

Burlington, Vermont.

Even the raiser of seed knows that the final end of potatoes is their use as food and to increase the demand for high quality table stock is as much to his interest as to the grower of the table stock. The traveler knows from sad experience how seldom he can find a good potato in either restaurant or hotel, and the many comments made by the visitors to the Vermont booth who received a real Green Mountain potato direct from the Green Mountain State suggested what a big field is open in the introduction of high quality products.

SHIPPING INSPECTION IN VERMONT

Harold Bailly

All certified seed potatoes shipped under the State of Vermont tags must be inspected at time of shipment by an authorized inspector. The specifications for U. S. Grade No. 1 constitute the basis of the grading regulations. To this is added a restriction allowing but one per cent spindling tuber, and one setting the maximum size for potatoes of the long varieties at 12 ounces and for the round varieties at 10 ounces; also, this season for the first time, it is required that not over 10 per cent of the tubers shall be seriously affected with rhizoctonia (black scurf).

By a further revision of the rules, a grade has been established covering potatoes from certified fields if graded in accordance with the requirements for U. S. Grade No. 2. Special tags, not bearing the State seal, and plainly stating the conditions of grading, will be issued for such potatoes in this class as pass shipping inspection. They are not certified seed within the meaning of the rules, however.

The sale and shipment of certified seed without tags, and hence, without shipping inspection, is still allowable, but potatoes so handled must be graded according to the rules.

Shipping inspection has been carried on in Vermont for three years and it is felt that the results have been highly advantageous to all concerned. Comparatively few complaints have been received from buyers, and a greater part of these have been occasioned by misunderstandings of the certification system. *Rhizoctonia* on the tubers has probably been the chief bone of contention, and since our regulations have not previously placed any definite ban upon it, the growers have had the technical advantage. It is expected that the revision in the rules will eliminate difficulty in this direction. The non-use of state shipping tags, where these had not been called for, also has occasioned some controversy, and it should always be fully specified in the sale whether tags are to be used or not.

Failure to discard enough potatoes which have been damaged by cutting and bruising has usually been the chief factor in the failure of potatoes to pass shipping inspection. This may be due to several causes, but poor light for grading work is one of the principal ones. Of course, undue haste and poor equipment result poorly in this as in any other work.

If each grower would occasionally inspect his own grading by turning out a sack which has been put up for use and then sorting out all those tubers which should not have been included according to the various clauses in the rules, much better grading would result, and delays or expensive regrading work would cease to be necessary.

THE CLASSIFICATION OF VARIETIES OF THE POTATO. — FIELD DEMONSTRATION

ADAM MILLAR¹, Edinburgh, Scotland

The experience gained in 1918 and 1919, the initial years of the Board's scheme for the inspection of growing crops of the potato, showed the necessity of describing the varieties accurately in detail, and of classifying them in a systematic manner in order to simplify and facilitate the work of inspection.

There are now so many distinct varieties of the potato (1,000 types are given in the Board's Compiled List of Synonyms, and 200 of these varieties are grown in the collection at East Craigs)

that it is impossible to remember the characteristics of all of them without an adequate system of classification. Moreover, new varieties are constantly coming into commerce, and it is necessary that growers should understand what relationship they bear towards standard varieties, and to which type they most nearly approximate.

The system of classification must be adequate for this purpose, must be complete and accurate, and with emphasis on the essential features of each variety.

The essentials of a classification are as follows:—

- (1). The main distinctions must be well defined and constant.
- (2). The potato is a commercial plant. The classification must indicate the commercial type of the variety.
- (3). The main group divisions must be few in number.
- (4). The classification must be logical and constant throughout.

Reference was made to the work of the Synonym Committee in discouraging the re-naming of varieties. In this connection, it was mentioned that natural seedlings of *Ally*, *Abundance*, *Majestic* and *Templar* have been found which are anatomical replicas of the parent types. Some of these seedlings have proved susceptible to wart disease.

The details of the classification can be seen from the annexed key. The first division is that of maturity; the second, colour of sprout; the third, colour of skin; the fourth, shape of tuber; the fifth, colour of flower.

The colour of the sprout can be inferred during the growing season from the following characteristics:

- (1). All plants having red purple flowers have pink sprouts.
- (2). All plants having blue purple flowers have blue sprouts.
- (3). The colour of the sprout corresponds to any colour on the tuber itself, including the tiny scale leaves about the eyes, or on the underground runners (or stolons).

The supreme importance of foliage characteristics in the identification of varieties was explained. Reference was made to the Board's publication on this subject, namely, "The Maintenance of Pure and Vigorous Stocks of Varieties of the Potato." It was shown how the descriptions in this publication were applied to selected samples in the field. Haulms and tubers were shown, and the points of distinction explained. In addition it was shown, also by reference to actual samples, how these selected varieties differed from the principal rogues found in the stocks.

(1) Brief abstract of paper read at field meeting of Potato Conference held at Edinburgh, August 20-21, 1924.

SEED POTATO CLASSIFICATION

W. Stuart

The Seed Department of the Maine Potato Growers' Exchange

is offering three classes or grades of seed potatoes. The first class is to be distributed under the trade name of Betelguese. The seed offered under this name represents stock selected by the Exchange pathologist, Dr. H. C. Sands and is supposed to be of the highest grade. The inspection and classification of this seed is entirely independent of any state or federal organization and represents Dr. Sand's conception of certified seed.

The second class, or grade, consists of state certified seed and is sold on the basis of the inspection record of the State Department of Agriculture.

Selected seed or the third class stock consists of stock regarded as too good for table purposes but not sufficiently free from disease to be included in either of the other two classes. Inspection of this stock is made by the Seed Department of the Exchange.

Grading of these three classes is made by foremen of grading tables who have previously been instructed by Dr. Sands as to type, size and quality of the tubers.

KEY TO THE CLASSIFICATION OF VARIETIES OF THE POTATO

Season of maturity	Color of sprout			Color of skin	
	Pink (including giant pink)	Blue		White	Colored
First Early					
Second Early					
Early main crop					
Late main crop					

Season of Maturing	Shape of tuber			Color of flower	
	Round	Oval (including) Oblong	Kidney	White	Non- Colored flowering
First Early					
Second Early					
Early main crop					
Late main crop					

BANKERS FINANCE MAINE POTATO GROWER'S EXCHANGE

W. Stuart

A recent press release sheet issued by the Department of Publicity of the Maine Potato Growers' Exchange announces the arrangement of a \$1,000,000 loan from Boston, New York and Aroostook County banks. This loan will enable the Exchange to

GOOD SEED PAYS

CANADIAN GOVERNMENT CERTIFIED
IRISH COBBLERS and GREEN MOUNTAINS

Also

MAINE CERTIFIED and SELECTED SEED

Maine Farms
and
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HARTLAND, N. B.

advance money to members of the organization prior to harvesting the crop.

The perfection and acceptance of this financing policy is a striking demonstration of the change in sentiment of capitalists toward the cooperative selling of potatoes.

The grower's responsibility for his crop ceases when he has dug and stored his crop.

SEPTEMBER MOVEMENT — OCTOBER CROP ESTIMATE

(Contribution from the Fruit and Vegetable Division, Bureau of Agricultural Economics, U. S. Dept. of Agriculture.)

September shipments of potatoes usually run 23,000 to 24,000 cars, but this season the September movement was two or three thousand cars short. Delayed digging, draggy markets, and the lighter crop in several important sections account for the difference. At the opening of the month, one-third of all the carlot supply was from New Jersey, and by the end of September the late-crop States had become the leaders. October has always been the big potato month, with a record in recent years of 35,000 cars, but it is doubtful whether the daily average this season will total 1,000 cars. During 1923, the carriers reported 921,000 cars of 36 fruits and veg-

etables. Potatoes comprised 242,000, or a little more than one-fourth the total movement. It must be remembered, however, that scarcely one-third of the entire potato crop enters into the carlot shipments.

Improved conditions in potato-producing districts resulted in a heavier September crop forecast for all important States except Colorado. The September estimate of 412,761,000 bushels slightly exceeds last year's total crop. Compared with August 1 figures, gains of about two million bushels each were reported for Maine, New York, and Wisconsin, with three million more in Minnesota. The increase for Michigan was one and one-half million and for North Dakota about one million bushels.

Although the market has been weak, the late crop situation is more encouraging than appears at first glance. Sweet potato production is the lightest in many years. Bulk of the heavier potato production this season has been in the early and intermediate States, which are nearly through shipping. This group had about 8,000,000 bushels more than last season, and has marketed 18,000 cars more than in 1923. The late surplus-producing States, from which come four-fifths of all carlot shipments, showed a net decrease in September of more than 5,000,000 bushels, or 8,500 carloads. September estimates for the North Central region indicated a gain of about 6,000,000 bushels over the 1923 crop, but decreases of 2,000,000 in New England, 1,500,000 in the Middle Atlantic States, 4,500,000 in the Mountain region, and 3,000,000 bushels on the Pacific Coast more than offset the increase. However, about half of all the late-potato shipments usually originate in the North Central States, which in September registered the probable 6,000,000 bushels gain.

During the last half of the month, declines of 5 to 30 cents per 100 pounds occurred in most city markets and important shipping sections. Trading generally showed little life. Striking differences were reported in the f. o. b. price of U. S. No. 1 Irish Cobbblers in Aroostook County, Maine, and at northern New Jersey points. Sacked and bulk stock closed in Maine at 55-60 cents, while sacked Jersey stock brought \$1.15 per 100 pounds. In a gradually descending scale, New Jersey Green Mountains ranged \$1.10-\$1.15 f.o.b. and Giants 95 cents to \$1.00; western New York Cobblers \$1.10; Idaho Russets for California shipment \$1.00; Colorado Red McClures 85 cents; Michigan and Wisconsin stock 80-90 cents; southern Minnesota round whites 70-85 cents and Red River Ohios 75-80 cents; Brown Beautys from southern Colorado 70 cents and People's Russets 65-70 cents. Idaho Rurals were moving slowly at 50-55 cents cash track. Far-western potatoes found their chief outlet in Texas carlot markets at slightly less than \$1.65. Chicago quoted northern potatoes mostly at 90 cents to \$1.20, with western Rurals averaging somewhat above that range. Sacked potatoes in eastern consuming centers ranged generally from \$1.25 to \$1.50

per 100 pounds wholesale, while best Virginia and Maryland Cobblers sold at \$2.00-\$2.25 a barrel.

SPINDLE-TUBER AND GIANT HILL

A. H. Gilbert

Throughout the present season the writer, while making inspections in Vermont fields has been critically studying certain abnormal vine conditions. During the second inspection period through the investigation of tubers in hills whose vine characters had been particularly noted, certain rather constant correlations have been recognized. Vines of an unusually tall and widely branching type having a tendency to blossom later than the normal vines and to remain green and upright after the other vines have gone down, have been found to produce tubers generally of abnormal and undesirable shapes. The condition exhibited, externally, by such plants, has been somewhat loosely referred to as "Giant Hill". As a result of observations extending over two seasons the writer has found that such plants have a tendency to produce tubers either somewhat triangular in shape and pointed at the bud end or elongated and more or less constricted at some point between the stem and bud ends.

The two tuber types above referred to together with a third one are illustrated in Vermont Extension Service Circular No. 28. Neither the vine characters nor tuber shapes agree closely with those described for Spindle-tuber by Schultz and Folsom (U. S. Dept. of Agr. Journ. of Agr. Research, Vol. XXV, No. 2, p. 43-118, July 14, 1923). The vines are more coarse and rough with leaves not rugose or marginally inrolled as described for spindle-tuber. The tubers are generally few in number, large and irregular, though sometimes the condition is approximately normal both as to number and shape of tubers.

Further information and investigation is much needed as to the relation of Spindle-tuber and Giant Hill, if, indeed, there is any connection. It will be of value to know whether Giant Hill as such is associated with or possibly a form of Spindle-tuber and transmitted as is that disease by aphids, or whether it is a distinct exhibition of some other form of variation or degeneration.

It is clear at any rate that the appearance and increase of these troubles in the seed or commercial fields, especially the former, constitute a serious menace and that steps should be taken to eliminate from seed stock all such evidences of degeneration. In Vermont the growers are adopting the practice of growing an isolated seed plot for the production of foundation stock for the commercial field. The seed plot which may be planted in tuber units is then thoroughly rogued for disease and weak hills and

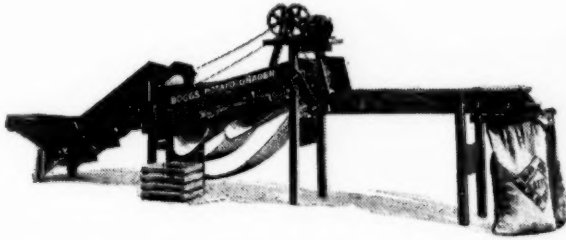
when dug any hills producing tubers undesirable in type may be discarded. In the present state of the seed potato industry resort must be had to the most painstaking methods in order to maintain the necessary supply of seed stock of good quality.

In the following table, note should be made of the increases or decreases since September and of the size of the crop compared with last year:

October Crop Forecast in 19 Late Surplus-Producing States

States	Forecast Oct. 1, 1924 (bushels)	Forecast Sept. 1, 1924 (bushels)	1923 Crop (bushels)
New England:			
Maine	33,761,000	30,186,000	31,992,000
Vermont	3,861,000	3,917,000	4,320,000
Middle Atlantic:			
New York	40,093,000	39,401,000	39,729,000
Pennsylvania ...	26,328,000	24,903,000	26,145,000
North Central:			
Michigan	33,911,000	33,110,000	35,796,000
Wisconsin	30,140,000	30,038,000	26,112,000
Minnesota	42,462,000	42,135,000	38,304,000
North Dakota ...	14,737,000	14,956,000	13,114,000
South Dakota ...	6,867,000	7,051,000	7,744,000
Nebraska	8,505,000	8,904,000	8,880,000
Mountain Region:			
Montana	3,957,000	4,329,000	3,960,000
Wyoming	1,435,000	1,546,000	1,710,000
Colorado	10,864,000	10,623,000	13,530,000
Utah	2,190,000	2,058,000	2,688,000
Nevada	646,000	592,000	870,000
Idaho	10,881,000	10,854,000	11,725,000
Pacific Region:			
Washington	6,346,000	6,527,000	8,060,000
Oregon	3,766,000	3,766,000	4,180,000
California	6,970,000	6,762,000	7,800,000
Total 19 States ..	287,720,000	281,658,000	286,659,000
Grand Total United States (early, inter- mediate & late)	423,508,000	412,761,000	412,392,000

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